



## Evaluation Model for the Sustainable Development of European Coastal Zones



SUMMARY



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## 1.- INTRODUCTION

The state and evolution of the coastal environment is one of the main concerns of the European Institutions. Most of the coastal zones in Europe are subject to high levels of human pressure. Almost 50% of the European population lives within 50 km of the coastline of Europe (89,000 km) and the economic resources that this strip generates represent a large part of the Union's wealth (tourism, fishing, transport, industry and trade).



However, the intensive and growing use of natural coastal resources has a negative effect on the quality of the waters, the availability of water resources, the stability of the beaches, the marine and coastal ecology, the landscapes and the atmosphere, very frequently meaning that these zones are found in a at risk condition. This intensive use can lead to a devaluation of the natural capital of these zones and the resulting negative social and economic effects.

Within this context, on 30 May 2002 the European Parliament and the Council, approved the *Recommendation concerning the implementation of Integrated Coastal Zone Management* with the aim of encouraging all coastal Member States and Candidate Countries to draw up in 2006 coastal strategies based on integrated management principles intended to guide European coastal zones towards more sustainable scenarios.

Within this framework, an Interreg IIIC – South DEDUCE project was initiated, which is aimed at validating essential methodological tools that foster the strategies of integrated coastal zone management following the principles and criteria established in the Recommendation. The main decision-making tools which will be used for experimenting data-management are:

- Indicators for the integrated management of coastal zones
- Geographical information systems of the coast
- Reports on the state of sustainability of the coast
- Networking the information on the coast

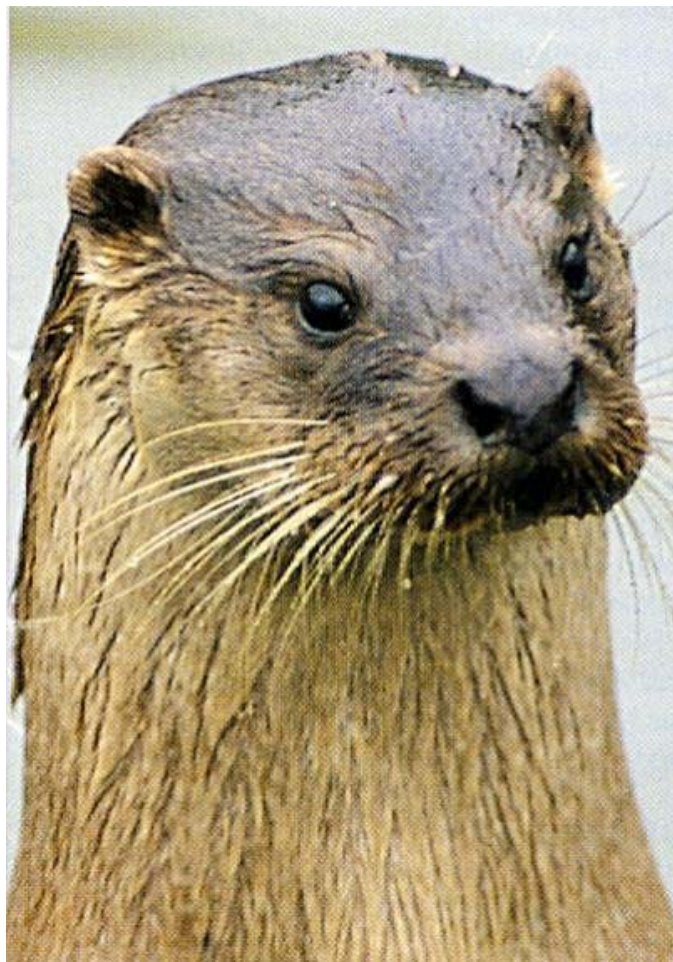


## **2.- CONTEXT OF DEDUCE**

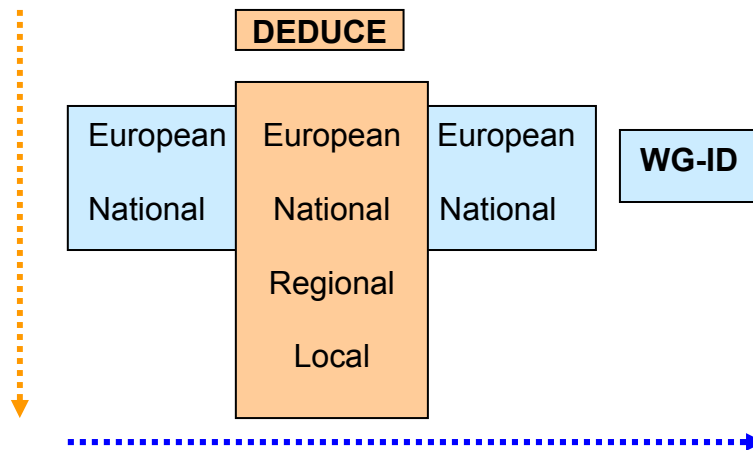
Within the framework of the introduction of the European Recommendation, the European Commission created the EU **Integrated Coastal Zone Management Expert Group (EU ICZM)**, which set up a **Working Group on Indicators and Data (WG-ID)** with the aim of defining a system of indicators that would serve the European institutions and the Member States to evaluate and follow-up the sustainability of the state of the coast.

The result of the work carried out by the WG-ID is a list of twenty-eight indicators that are structured as per the seven main objectives of the European Recommendation:

- To control, as appropriate, further development of the undeveloped coast.
- To protect, enhance and celebrate, natural and cultural diversity.
- To promote and support a dynamic and sustainable coastal economy.
- To ensure that beaches are clean and the coastal waters are unpolluted.
- To reduce social exclusion and promote social cohesion in coastal communities.
- To use natural resources wisely.
- To recognise the threat to coastal zones posed by climate change and to ensure appropriate and ecologically responsible coastal protection.



The DEDUCE project is based on the twenty-eight indicators set up by the Working Group on Indicators & Data of the European Commission (WG-ID) and organises a process of calculation, validation and analysis of the findings at all decision-making levels: European, national, regional and local.



### Chronology of approval of the DEDUCE project

30/04/2004	Presentation of the dossier of the candidature of the DEDUCE project to the Joint Technical Secretariat of the Interreg III C South programme (Department of Economy, Treasury and Employment of the Government of Valencia).
27/07/2004	The Programming Committee of the Joint Technical Secretariat approved the DEDUCE project.
18/01/2005	Signing of the Fund Allocation Contract between the Joint Technical Secretariat and the Department of the Environment and Housing of the Government of Catalonia, acting as the Leader of the project.

### 3.- CURRENT SITUATION AND CHALLENGES



The coastal areas, despite their strategic, economic, cultural and environmental importance, are not particularly visible. This invisibility makes it impossible to fully capture the processes that take place in reality, generates a lack of knowledge and, as a result of this, leads to decisions that are not always the correct ones being made by the agents who intervene in this area.

The invisibility of the processes on the coast contrasts with the great quantity and dispersion of information available that often makes the problem even greater. Therefore, it is essential to organise and structure the data by means of indicators that highlight the main problems and processes.



The main challenge for DEDUCE is to show the use, feasibility and need for the integrated focusing of information through indicators for an integrated management of European coastal zones.

#### 4.- OBJECTIVES

The main objective of the DEDUCE project is **to improve the tools and the information systems necessary for optimal decision making about the coast, at all levels: European, national, regional and local.**

The specific objectives are:

1. To calculate and compare the 28 indicators of sustainable development agreed.
2. To evaluate and compare the geographical information systems (GIS) for the analysis and viewing of the state of the environment of each of the coastal areas and the methodologies based on the use of the GIS through the website (GIS-WEB).
3. To establish common model for reporting on the state of sustainability of the coast, in which the effects of human activities and their impacts are evaluated and monitored.
4. To draw up a guide for the use of the indicators of sustainability for examining the development of the state of the coast.
5. To study the possibility of setting a European regional information observatory.



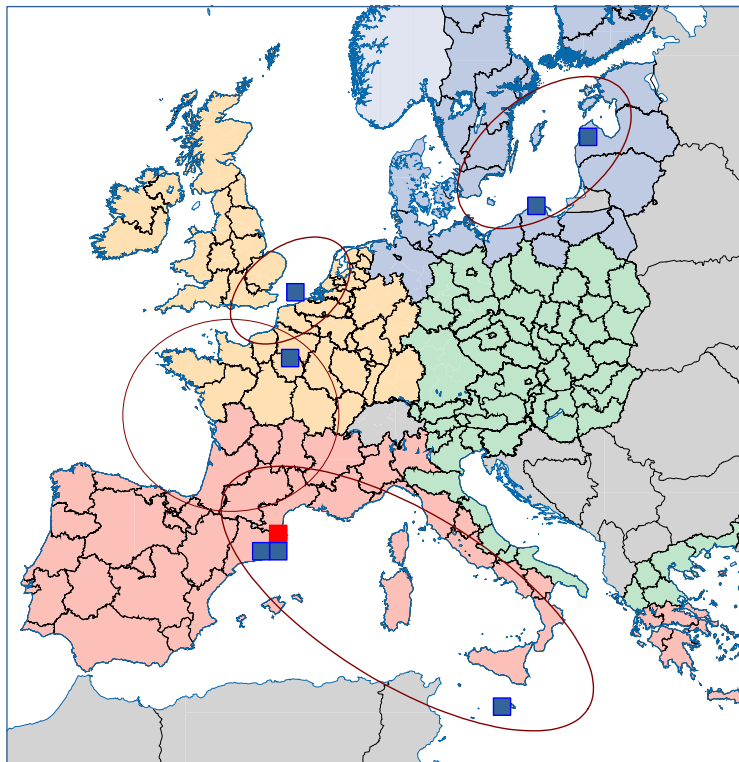
Amongst all the partners in the project there is representation from European, state, regional and local bodies, which will enable us to check whether the methodology that is defined by the calculation of the indicators is useful and feasible for the various territorial levels and existing information systems.

## 5.- DEDUCE PARTNERS

There are nine partners which will participate in the development of the project:

- Department of the Environment and Housing. Government of Catalonia. Spain
- Prat de Llobregat Town Council. Spain
- Viladecans Town Council. Spain
- The Autonomous University of Barcelona – European Topic Centre on Terrestrial Environment (ETC/TE) of the European Environment Agency. Spain
- Institut Français de l'Environnement (IFEN) which depends on the French Ministry of the Environment. France
- Malta Environment and Planning Authority (MEPA). Malta
- Province of Western Flanders. Belgium
- University of Latvia
- Maritime Institute in Gdansk. Poland

**Map of the participating partners of DEDUCE**



## 6.- PROJECT DESCRIPTION

The DEDUCE project contains five main actions, which are described in chronological order:

**6.1. Calculation of indicators for a sustainable development of the coast.** This consists of defining and agreeing on the suitable methodologies and carrying out the calculation of the indicators of all the decision levels (European, national, regional and local), with the objective of identifying gaps in the information and the use and compatibility of the indicators.



The indicators approved by the WG-ID and which will be used in the DEDUCE project are:

GOALS	No	INDICATORS	MEASUREMENTS
To control as appropriate further development of the undeveloped coast	1	DEMAND FOR PROPERTY ON THE COAST	11. Size and structure of the population living on the coast
	2	AREA OF BUILT-UP LAND	21. Percent of built-up land by distance from the coastline
	3	RATE OF DEVELOPMENT OF PREVIOUSLY UNDEVELOPED LAND	31. Area converted from non-developed to developed land uses
	4	DEMAND FOR ROAD TRAVEL ON THE COAST	41. Volume of traffic on coastal motorways and major roads
	5	PRESSURE FOR COASTAL AND MARINE RECREATION	51. Number of berths and moorings for recreational boating
To protect, enhance and celebrate natural and cultural diversity	6	LAND TAKE BY INTENSIVE AGRICULTURE	61. Proportion of agricultural land farmed intensively
	7	AMOUNT OF SEMI-NATURAL HABITAT	71. Area of semi-natural habitat
	8	AREA OF LAND AND SEA PROTECTED BY STATUTORY DESIGNATIONS	81. Area protected for nature conservation, landscape and heritage
	9	EFFECTIVE MANAGEMENT OF DESIGNATED SITES	91. Rate of loss of, or damage to, protected areas
	10	CHANGE TO SIGNIFICANT COASTAL AND MARINE HABITATS AND SPECIES	101. Status and trend of specified habitats and species 102. Number of species per habitat type 103. Number of Red List coastal area species

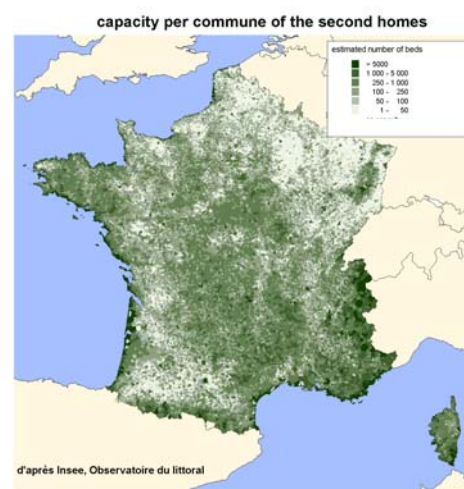


<b>To promote and support a dynamic and sustainable coastal economy</b>	11	LOSS OF CULTURAL DISTINCTIVENESS	111. Number and value of sales of local products with regional quality labels or European PDO/PGI/TSG
	12	PATTERNS OF SECTORAL EMPLOYMENT	121. Full time, part time and seasonal employment per sector
			122. Value added per sector
	13	VOLUME OF PORT TRAFFIC	131. Number of incoming and outgoing passengers per port
			132. Total volume of goods handled per port
			133. Proportion of goods carried by short sea routes
	14	INTENSITY OF TOURISM	141. Number of overnight stays in tourist accommodation
			142. Occupancy rate of bed places
	15	SUSTAINABLE TOURISM	151. Number of tourist accommodations holding EU Eco-label
			152. Ratio of overnight stays to number of residents
<b>To ensure that beaches are clean and that coastal waters are unpolluted</b>	16	QUALITY OF BATHING WATER	161. Percent of bathing waters compliant with the guide value of the European Bathing Water Directive
	17	AMOUNT OF COASTAL, ESTUARINE AND MARINE LITTER	171. Volume of litter collected per given length of shoreline
	18	CONCENTRATION OF NUTRIENTS IN COASTAL WATERS	181. Concentration of nitrates and phosphates in coastal waters
	19	AMOUNT OF OIL POLLUTION	192. Volume of accidental oil spills
193. Number of observed oil slicks from aerial surveillance			
<b>To reduce social exclusion and promote social cohesion in coastal communities</b>	20	DEGREE OF SOCIAL COHESION	201. Indices of social exclusion by area
	21	RELATIVE HOUSEHOLD PROSPERITY	211. Average household income
			212. Percent of population with a higher education qualification
			213. Value of residential property
22	SECOND AND HOLIDAY HOMES	221. Ratio of first to second and holiday homes	
<b>To use natural resources wisely</b>	23	FISH STOCKS AND FISH LANDINGS	231. State of the main fish stocks by species and sea area
			232. Recruitment and spawning stock biomass by species
			233. Landings and fish mortality by species
			234. Value of landings by port and species
24	WATER CONSUMPTION	241. Number of days of reduced supply	
<b>To recognise the threat to coastal zones posed by</b>	25	SEA LEVEL RISE AND EXTREME WEATHER CONDITIONS	251. Number of 'stormy days'
			252. Rise in sea level relative to land

climate change and to ensure appropriate and ecologically responsible coastal protection	26	COASTAL EROSION AND ACCRETION	261. Length of protected and defended coastline
			262. Length of dynamic coastline
			263. Area and volume of sand nourishment
	27	NATURAL, HUMAN AND ECONOMIC ASSETS AT RISK	271. Number of people living within an 'at risk' zone
			272. Area of protected sites within an 'at risk' zone
			273. Value of economic assets within an 'at risk' zone.
Implementation of ICZM	28	INTEGRATED COASTAL ZONE MANAGEMENT	274. Progress in the implementation of the ICZM

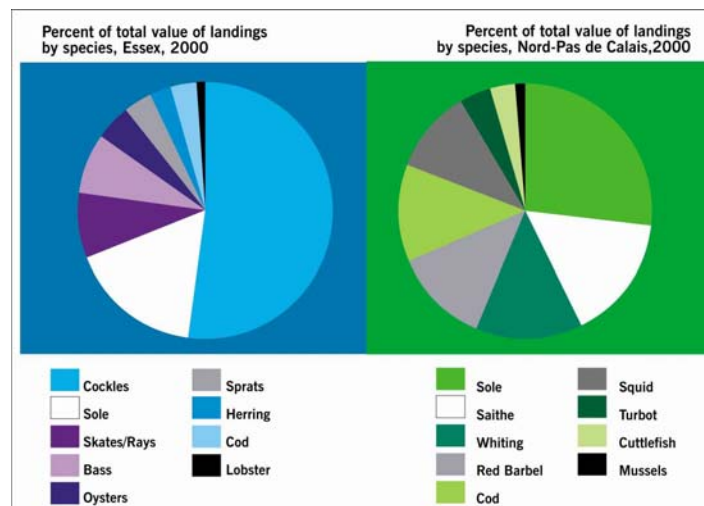
**6.2. Strengths and weaknesses of an integrated information system based on a GIS.** This consists of analysing the use of Geographical Information Systems (GIS) as tools for storage, presentation and analysis of the coastal data and analysing the use of the website as a tool for disseminating data (SIG-WEB) and the joint work between partners.

**6.3. Report on the state of the sustainability of the coast.** Assessment of common models for drawing up reports on the state of the coast at European, national, regional and local levels, which assess the changes and the effects of human activity on the coast.



**6.4. Guides on the use of the indicators for decision making.** Drawing up guidelines for the use of European, national, regional and local governments on the indicators of sustainability in carrying out decision making on the coast, through examples.

**6.5. To study the possibilities of creating a European regional coastal observatory.**



## 7.- ORGANISATION OF THE PROJECT

The DEDUCE project is directed and co-ordinated by the project **Leader**, the Government of Catalonia, through its Department of the Environment and Housing.

The administrative management and follow-up on the project is done by the **Network Management Group (NMG)**, made up of a representative from each of the participating partners in the project. This Management group will meet seven times during the project, in a different city each time.



Coinciding with the meetings of the NMG, six Regional Working Groups will be organised for the Assessment of Indicators (Regional Assessment Workshops), which are the meeting place for governmental representatives and experts on the coast to debate about the indicators and their use.

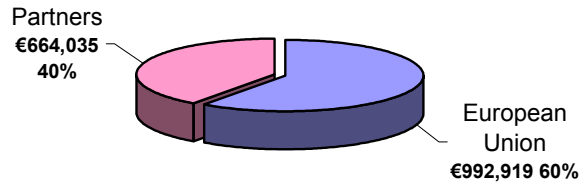
The following table summarises the calendar for the administrative and technical meetings of the DEDUCE project, planned until June 2007:

Phase	Network Management Group (MNG)	Regional Assessment Working Groups	Presentation to the European Parliament	Final conference
1	March 2005 (Barcelona)			
2	July 2005 (Malta) November 2005 (Ostend)	November (Ostend)		
3	March 2006 (Paris) July (Gdansk)	March 2006 (Paris) July (Gdansk)		
4	November 2006 (Riga)	September 2006 (Italy) November 2006 (Riga) December 2006 (Barcelona)		
5	March 2007 (Brussels) June 2007 (Barcelona)		March 2007 (Brussels)	June 2007 (Barcelona)

## 8.- BUDGET

### 8.1. Cost of the project

The total budget for the project is **€1,656,954**.



### 8.2. Contribution of the partners

Below is the list of total costs for each partner:

PARTNERS	Total (Euros)
Department of the Environment and Housing, Spain	324,672
Prat de Llobregat Town Council, Spain	28,450
Viladecans Town Council, Spain	53,000
Autonomous University of Barcelona (ETC/TE), Spain	210,032
Institut Français de l'Environnement (IFEN), France	173,000
Malta Environment and Planning Authority, Malta	219,256
Province of Western Flanders. Belgium	210,032
University of Latvia, Latvia	219,256
Maritime Institute in Gdansk, Poland	219,256
<b>TOTAL</b>	<b>1,656,954</b>

## 9.- TIMING OF THE PROJECT

The project runs from October 2004 till June 2007.

